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# Alberta 2002 Beekeepers' Survey Results

## Economics & Competitiveness





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## Acknowledgements

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This report is also available on the Internet at:

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## Alberta 2002 Beekeepers' Survey

### Purpose of Survey

In order to address some of the data gaps and information needs of the beekeeping industry in Alberta, each year, the Statistics and Data Development (SADD) Unit conducts a survey of beekeepers in the province. In particular, the survey is used to assist in the generation of provincial and regional estimates for selected honey variables (e.g. colony numbers, yield, production, etc.). Information captured from the survey includes data on colony numbers, yield, production and prices, and constitutes the basis for the estimates. These are used with information from other sources, to derive the provincial and regional estimates. Furthermore, estimates generated at both provincial and regional levels, along with the survey results, are shared with survey participants, industry and other stakeholders. As well, the provincial estimates on production, yield and colony numbers are forwarded to Statistics Canada, as part of a federal/provincial agreement, for incorporation into the honey statistics at the national level.

This report focuses on the results of the Alberta 2002 Beekeepers' Survey and the related estimates generated.

### Methodology

The Alberta Beekeepers' Survey, which is provincial in scope, collects data through a non-probability sampling procedure. In October 2002, survey questionnaires were mailed out to 618 beekeepers across the province. The questionnaires specifically asked survey participants to provide, at their earliest convenience, information on colony numbers, production, yield, bee purchases, prices (expected/actual), carry-over stocks and selected management practices, for their related beekeeping operation in 2002.

Survey participants were made aware that participating in the survey was voluntary. Moreover, all individual responses are kept confidential under the provisions of the Federal Statistics Act, as well as under the Provincial Freedom of Information and Protection of Privacy (FOIP) Act, by which the SADD Unit is governed and operates. In return for their participation, survey participants who were interested, were given the Unit's publication highlighting the results of the 2002 Beekeepers' Survey, the related provincial and regional estimates, and selected historical honey statistics. As of February, 2003, a total of 230 usable questionnaires were received and formed part of the basis in the generation of the Alberta 2002 honey production estimates.



Survey responses received were reviewed for data completeness, validated and entered into an electronic database. The data was then subjected to some computerized analyses, the results of which were rolled up into group summaries, to preserve data confidentiality of individual survey respondents. In turn, the group summaries, in conjunction with consultations with industry and Alberta Agriculture, Food and Rural Development (AAFRD) subject area/provincial specialists were used to generate provincial and regional estimates on the number of producers, colonies, yield and production.

It should be noted that the derived estimates are subject to error. Some of the possible causes of error include data coding, data entry, editing and tabulation. Nonetheless, we believe that the statistics published in this report are reliable estimates for Alberta.

For further information on the survey results, please contact:

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## Highlights of the Alberta 2001/2002 Beekeeping Surveys

The following are the survey highlights based on 107 producers in Alberta who participated in both the 2001 and 2002 Beekeeping Surveys. For more detailed information, please refer to Table 1.

### **Paired Sample Highlights:**

- ▶ In 2002, producers bought more queen packages/nucs than in 2001. Purchases increased roughly 63 per cent, with the average producer buying 52 packages/nucs, compared to 32 in 2001. Of the total purchases, roughly 1 per cent was sourced domestically from Alberta, with the balance imported.
- ▶ All of the queen packages purchased in 2002 were imported from Australia (95%) or New Zealand (5%). Producers sourced 91 per cent of their nuc purchases being imported from British Columbia, with the balance being sourced locally in Alberta. This is a sharp contrast to 2001 when all purchases of nucs were sourced in Alberta.
- ▶ Like the year before, all of the imported package purchases in 2002 came from two sources, namely Australia and New Zealand, with the former accounting for the bulk (94.6%) of imports. The Australian imports increased roughly 8 per cent from the 2001 distribution. This is likely attributed to a price effect because the average price per package purchased from Australia decreased in 2002 from 2001, while the New Zealand price increased. The average price of a two pound package from Australia was \$66.04, while for New Zealand it was 13.8 per cent higher at \$75.13. As alluded to earlier, almost all of the nucs purchased in 2002 were from British Columbia. The average nuc price in British Columbia was \$89.00 for 2002. Alberta nuc prices increased sharply in 2002, with the average price of a nuc at \$104.55, compared to \$76.63 a year earlier. The Albertan price increase could be attributed to a reduction in supply caused by the drought, thus encouraging nuc imports from British Columbia.
- ▶ "Individual" queen purchases in 2002 increased 1.3 per cent, with the average producer purchasing 173 queens, compared to 170 in 2001. Nearly all of the queen purchases continue to be sourced from outside the province (99.3%), with less than one per cent being of Alberta origin. Hawaii remains the primary source of imports, accounting for 94.3 per cent of the total, while British Columbia is second with 3.9 per cent of individual queen imports.

- ▶ "Individual" queen prices were higher in 2002, than in 2001, for all regions sourced. Average queen prices in 2002 ranged from \$14.62 - \$19.29, depending on place of purchase. Prices were the highest in the region "other" at \$19.29 per queen, followed by New Zealand (\$16.24), and Australia (\$15.62). Alberta had the lowest price at \$14.62, with Hawaii next, at \$14.73 per queen.
- ▶ The percentage deathloss for queens purchased in packages and nucs increased in 2002 to 9.6 per cent, compared to 3.5 per cent a year earlier. An upward trend was also noted for individual queens purchased, with the average deathloss rising to 7.6 per cent, compared to 7.3 per cent in 2001.
- ▶ For those producers raising queens in 2002, the average number raised was 40. Most of the queens raised were for personal use. Regionally in the province, queen raising was most predominant in the Central Region, accounting for 65.8 per cent of the total raised. This was followed by the North West, Peace and South Regions with 17.3 per cent, 16.3 per cent, and 0.6 per cent, respectively. No queen raising was done in the North East.
- ▶ There was more honey in inventory in 2002, than a year earlier. Producers on average had 953 pounds on hand, compared to 755 pounds in 2001.
- ▶ Alberta continues to be the place of choice when it comes to over-wintering active colonies. Data from the paired sample show the province accounting for all of the hives over-wintered in 2002.
- ▶ "Outdoor" over-wintering remains the norm in Alberta, accounting for close to 87 per cent of the total colonies over-wintered.
- ▶ The average beekeeper on survey in 2002 had about 18 years of beekeeping experience. Years of experience in over-wintering both "indoor" and "outdoor" were lower, at roughly nine and fourteen years, respectively.
- ▶ Producer prices received in 2002 for honey were higher than expectations. The average price realized for retail honey was \$ 174.81 per cwt, 9.1 per cent higher than their expected price of \$160.19. The realized price for wholesale honey was \$101.55 per cwt, rising \$5.68 per cwt above the expected price of \$95.87. Expected honey prices in 2002 are \$198.51 per cwt wholesale, and \$219.40 per cwt retail.



**Table 1 - 2001 AND 2002 BEEKEEPING SURVEY RESULTS - ALBERTA\***

**(GROUP AVERAGES)**

DESCRIPTION	2001	2002	02/'01 (%)
<b>PACKAGES/NUCS:</b>			
Average number of packages/nucs purchased in spring per beekeeper	31.94	52.18	163.4
Package queen/nuc deathloss (%)	3.50	9.59	274.0
Percent of packages/nucs purchased:			
- Locally (Alberta) (%)	36.79	1.24	3.4
- Imported (%)	63.21	98.76	156.2
Distribution of imported packages purchased:			
- New Zealand (%)	12.85	5.37	41.8
- Australia (%)	87.15	94.63	108.6
- Other (%)	-----	-----	n/a
Distribution of nucs purchased:			
- Alberta (%)	100.00	8.94	8.9
- British Columbia (%)	-----	91.06	n/a
Average price per package (2 lb equivalent) purchased from:			
- New Zealand (\$)	72.91	75.13	103.0
- Australia (\$)	72.00	66.04	91.7
- Alberta (\$)	80.93	-----	n/a
- Other (\$)	-----	-----	n/a
Average price per nuc purchased from:			
- British Columbia (\$)	-----	89.00	n/a
- New Zealand/Australia (\$)	-----	-----	n/a
- Alberta (\$)	76.63	104.55	136.4
<b>INDIVIDUAL QUEENS:</b>			
Average number of queens purchased in spring per beekeeper	170.42	172.68	101.3
Purchased individual queen deathloss (%)	7.31	7.60	104.0
Percent of individual queens purchased:			
- Locally (Alberta) (%)	7.23	0.74	10.2
- Imported (%)	92.77	99.26	107.0
Distribution of imported queens:			
- British Columbia (%)	5.73	3.89	67.9
- New Zealand (%)	3.18	0.39	12.3
- Australia (%)	1.73	0.30	17.3
- Hawaii (%)	89.35	94.25	105.5
- Other (%)	-----	1.18	n/a
Average price per individual queen purchased from:			
- British Columbia (\$)	12.74	15.11	118.6
- New Zealand (\$)	15.95	16.24	101.8
- Australia (\$)	14.24	15.62	109.7
- Hawaii (\$)	13.77	14.73	107.0
- Alberta (\$)	14.04	14.62	104.1
- Other (\$)	-----	19.29	n/a

\* Based on paired sample      n/a - Not applicable

Note: Some totals may not add up due to rounding.

Source: Statistics and Data Development Unit, Alberta Agriculture, Food and Rural Development



**Table 1 (Cont'd) - 2001 AND 2002 BEEKEEPING SURVEY RESULTS - ALBERTA\***  
**(GROUP AVERAGES)**

DESCRIPTION	2001	2002	02/'01 (%)
<b>OTHER SELECTED STATISTICS:</b>			
Honey in inventory as of June 30th, per beekeeper (lbs.)	755.29	952.67	126.1
Experience in beekeeping (years)	16.96	18.27	107.7
Estimated number of colonies per active beekeeper	318.50	299.06	93.9
Over-wintering intentions for active colonies:			
- indoors in Alberta (%)	11.53	13.17	114.2
- outdoors in Alberta (%)	88.47	86.83	98.1
- in British Columbia (%)	----	----	n/a
Experience in over-wintering (years):			
- indoors	9.08	8.50	93.6
- outdoors	13.55	14.33	105.8
Price received for 2001 honey crop:			
- Retail (\$/cwt)	160.19 ***	174.81 ****	----
- Wholesale (\$/cwt)	95.87 ***	101.55 ****	----
Price expected for 2002 honey crop:			
- Retail (\$/cwt)	n/a	219.40	
- Wholesale (\$/cwt)	n/a	198.51	

\* Based on paired sample    \*\*\* Expected price in 2001    \*\*\*\* Actual price received in 2001    n/a Not applicable

Note: Some totals may not add up due to rounding.

Source: Statistics and Data Development Unit, Alberta Agriculture, Food and Rural Development

## Honey Production in Alberta

The estimated number of beekeepers in Alberta declined in 2002. There were roughly five per cent fewer beekeepers in the province at 702, compared to 739 in 2001 (see Tables 2 and 3). At the national level, preliminary estimates show the number of beekeepers in Canada falling by 2.4 per cent, to 8,884 compared to 9102 in 2001. Currently, Alberta accounts for about eight per cent of the beekeepers in Canada, and roughly 14.5 per cent of the estimated Western Canadian total of 4,827.

While producer numbers declined in 2002, colony numbers in Alberta were the same as in 2001. There were 227,000 colonies, which matches the new industry record high from 2001. Nationally, colony numbers decreased roughly 2.8 per cent to 585,683, compared to 602,328 in 2001. It is interesting to note that despite Alberta having about eight per cent of the nation's beekeepers, the province had more than one-third (38.9 %) of the honey producing colonies in Canada.

Alberta produced more honey in 2002 than was earlier estimated. Final estimates indicate total production at 29.7 million pounds, compared to the preliminary fall estimate of 24.1 million pounds. The marked increase in production was the result of a higher than expected provincial average yield of 131 pounds per colony, which is the highest for the province since 1998. This is a wonderful result considering much of the province experienced "drought-like" conditions in 2002. The 2002 provincial production is the highest since the peak of 38.3 million pounds in 1998, and 10.8 per cent higher than the 26.8 million pounds in 2001.

Based on the earlier spring estimate, Canadian honey production in 2002 decreased to 73.4 million pounds, from 78.0 million pounds a year earlier. However, with the marked revision in Alberta's production, along with revisions from other provinces (if any), final production figures for Canada should climb in 2002, to somewhere approaching 79 million pounds. If materialized, this will again result in Alberta accounting for roughly over one-third of the nation's honey production.

Regionally in Alberta, honey production in 2002 was highest in the Peace Region (see Table 4). This Region produced roughly 10.4 million pounds of honey, or 34.9 per cent of the total provincial production of 29.7 million pounds. The North West Region closely followed with production of roughly 10.2 million pounds (34.3%), followed by the North East Region with roughly 4.6 million pounds (15.4%). The Central Region had the lowest production at roughly 1.3 million pounds (4.2%), while in the South it was 3.3 million pounds (11.2%). It cannot be over emphasized that honey production on a regional basis is directly tied to colony numbers and yield, hence, explaining the variance among Regions.

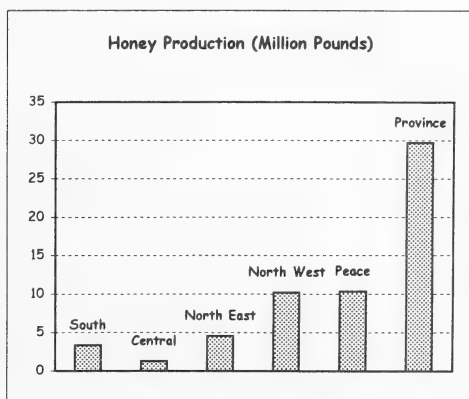
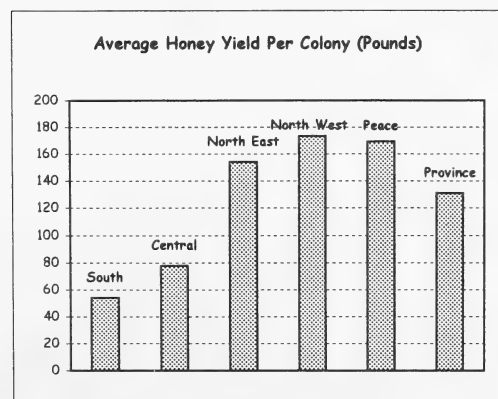
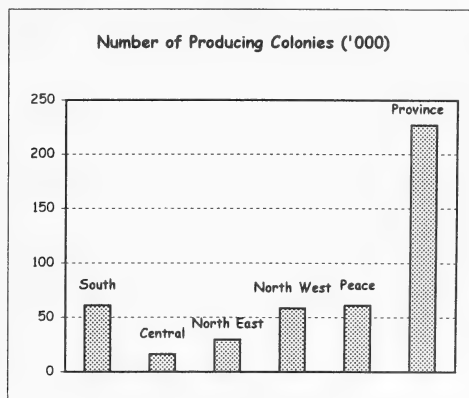
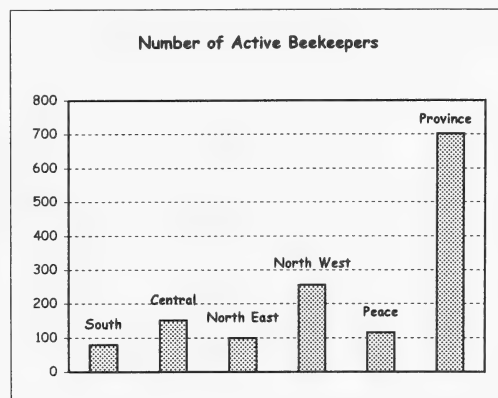
**Table 2 - 2002 HONEY PRODUCTION ESTIMATE - ALBERTA**

Region	Number of Active Beekeepers	Number of Producing Colonies	Honey Yield Per Colony		Total Honey Produced	
			lbs	kg	lbs	tonnes
South	80	61,317	54	25	3,330,121	1,511
Central	151	16,120	78	35	1,255,820	570
North East	100	29,622	154	70	4,570,304	2,073
North West	256	58,767	174	79	10,204,784	4,629
Peace	115	61,174	170	77	10,375,971	4,707
Province	702	227,000	131	59	29,737,000	13,489

Note: Yield and honey production rounded to the nearest pound, kilogram or tonne.

Totals may not add due to rounding.

**2002 REGIONAL DISTRIBUTION OF ALBERTA'S ESTIMATED HONEY PRODUCTION  
(SELECTED HONEY STATISTICS)**



Source: Statistics and Data Development Unit, Alberta Agriculture, Food and Rural Development



## AAFRD Regions



## Alberta Municipalities Classified by Region

### South Region\*

Legal Name	AMC	Reference
Cardston County	-----	M.D. No. 6
Cypress County	-----	M.D. No. 1
Foothills No. 31	MD 31	M.D. No. 31
Forty Mile County No. 8	CO 8	County No. 8
Lethbridge County	-----	County No. 26
Newell County No. 4	CO 4	County No. 4
Pincher Creek No. 9	MD 9	M.D. No. 9
Ranchland No. 66	MD 66	M.D. No. 66
Taber	MD	M.D. No. 14
Vulcan County	-----	County No. 2
Warner County No. 5	CO 5	County No. 5
Wheatland County	-----	County No. 16
Willow Creek No. 26	MD 26	M.D. No. 26

### Central Region\*

Legal Name	AMC	Reference
Acadia No. 34	MD 34	M.D. No. 34
Bighorn No. 8	MD 8	M.D. No. 8
Calgary	-----	Calgary
Clearwater County	-----	M.D. No. 99
Kneehill County	-----	M.D. No. 48
Lacombe County	-----	County No. 14
Mountain View County	-----	County No. 17
Paintearth County No. 18	CO 18	County No. 18
Ponoka County	-----	County No. 3
Red Deer County	-----	County No. 23
Rocky View No. 44	MD 44	M.D. No. 44
Special Area No. 2	SA 2	S.A. No. 2
Special Area No. 3	SA 3	S.A. No. 3
Special Area No. 4	SA 4	S.A. No. 4
Starland County	-----	M.D. No. 47
Stettler County No. 6	CO 6	County No. 6

### North East Region\*

Legal Name	AMC	Reference
Beaver County	-----	County No. 9
Bonnyville No. 87	MD 87	M.D. No. 87
Camrose County No. 22	CO 22	County No. 22
Flagstaff County	-----	County No. 29
Lakeland County	-----	M.D. No. 87
Lamont County	-----	County No. 30
Minburn County No. 27	CO 27	County No. 27
Opportunity No. 17	MD 17	M.D. No. 17
Provost No. 52	MD 52	M.D. No. 52
Smoky Lake County	-----	County No. 13
St. Paul County No. 19	CO 19	County No. 19
Two Hills County No. 21	CO 21	County No. 21
Vermilion River County No. 24	CO 24	County No. 24
Wainwright No. 61	MD 61	M.D. No. 61

### North West Region\*

Legal Name	AMC	Reference
Athabasca County No. 12	CO 12	County No. 12
Barrhead County No. 11	CO 11	County No. 11
Brazeau No. 77	MD 77	M.D. No. 77
Edmonton	-----	Edmonton
Lac Ste. Anne County	-----	County No. 28
Leduc County	-----	County No. 25
Lesser Slave River No. 124	MD 124	M.D. No. 124
Parkland County	-----	County No. 31
Strathcona County	-----	County No. 20
Sturgeon County	-----	M.D. No. 90
Thorhild County No. 7	CO 7	County No. 7
Westlock County	-----	M.D. No. 92
Wetaskiwin County No. 10	CO 10	County No. 10
Woodlands County	-----	M.D. No. 15
Yellowhead County	-----	M.D. No. 94

### Peace Region\*

Legal Name	AMC	Reference
Big Lakes	MD	M.D. BGL
Birch Hills County	-----	M.D. No. 19
Clear Hills No. 21	MD 21	M.D. No. 21
East Peace No. 131	MD 131	M.D. No. 131
Fairview No. 136	MD 136	M.D. No. 136
Greenview No. 16	MD 16	M.D. No. 16
Grande Prairie County No. 1	CO 1	County No. 1
Mackenzie No. 23	MD 23	M.D. No. 23
Northern Lights No. 22	MD 22	M.D. No. 22
Peace No. 135	MD 135	M.D. No. 135
Saddle Hills County	-----	M.D. No. 20
Smoky River No. 130	MD 130	M.D. No. 130
Spirit River No. 133	MD 133	M.D. No. 133

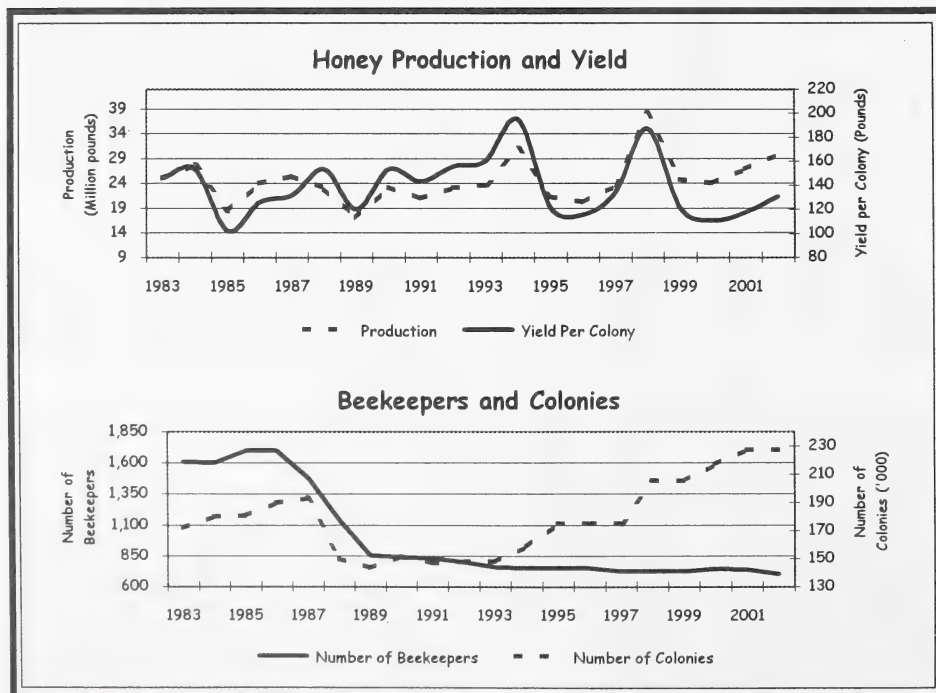
AMC – Abbreviated Municipality Code  
Reference – Prior Legal Name

\* AAFRD Regional boundaries no longer exist; however, these have been maintained to facilitate historical comparisons.

**Table 3 - ALBERTA HONEY STATISTICS, 1983-2002**

Year	No. of Beekeepers	No. of Colonies	Production ('000 pounds)	Yield per Colony (pounds)	No. of Colonies Per Beekeeper
1983	1,610	172,000	25,100	146	107
1984	1,600	180,000	27,650	154	113
1985	1,700	181,000	18,500	102	106
1986	1,700	190,000	24,000	126	112
1987	1,480	193,000	25,500	132	130
1988	1,140	150,000	23,000	153	132
1989	855	143,500	17,220	120	168
1990	840	152,000	23,294	153	181
1991	830	147,000	21,032	143	177
1992	800	148,000	23,088	156	185
1993	761	148,000	23,745	160	194
1994	750	159,000	31,005	195	212
1995	750	175,000	21,306	122	233
1996	750	175,000	20,215	116	233
1997	725	175,000	23,625	135	241
1998	730	205,000	38,335	187	281
1999	725	205,000	24,805	121	283
2000	747	217,000	24,087	111	290
2001	739	227,000	26,786	118	307
2002	702	227,000	29,737	131	323

**Alberta Honey Production, Yield, Beekeepers and Colonies**



Source: Statistics and Data Development Unit, Alberta Agriculture, Food and Rural Development

**Table 4 - HONEY PRODUCTION BY REGION IN ALBERTA (1995-2002)**

Region	1995	1996	1997	1998	1999	2000	2001	2002
<b>Number of Active Beekeepers</b>								
South	81	77	72	75	74	83	91	80
Central	154	156	149	151	160	162	158	151
North East	103	110	103	101	105	106	104	100
North West	290	291	280	279	273	278	272	256
Peace	122	116	121	124	113	118	114	115
Province	750	750	725	730	725	747	739	702
<b>Number of Producing Colonies</b>								
South	40,846	45,094	43,398	54,900	52,085	56,756	58,140	61,317
Central	8,849	8,199	9,722	12,018	16,017	16,786	17,414	16,120
North East	21,593	22,585	23,401	26,887	27,756	30,864	31,284	29,622
North West	51,876	47,810	48,528	56,658	54,423	58,782	62,697	58,767
Peace	51,836	51,311	49,951	54,537	54,719	53,812	57,466	61,174
Province	175,000	175,000	175,000	205,000	205,000	217,000	227,000	227,000
<b>Average Yield (pounds per colony)</b>								
South	66	101	108	78	48	68	120	54
Central	83	93	124	125	52	89	119	78
North East	130	85	131	254	162	156	136	154
North West	134	132	145	245	177	145	97	174
Peace	156	130	153	217	135	100	128	170
Province	122	116	135	187	121	111	118	131
<b>Honey Production ('000 pounds)</b>								
South	2,696	4,571	4,672	4,281	2,495	3,843	6,999	3,330
Central	739	761	1,209	1,507	829	1,493	2,076	1,256
North East	2,807	1,926	3,071	6,830	4,484	4,819	4,251	4,570
North West	6,951	6,296	7,053	13,890	9,621	8,528	6,077	10,205
Peace	8,112	6,660	7,619	11,827	7,376	5,404	7,383	10,376
Province	21,306	20,215	23,625	38,335	24,805	24,087	26,786	29,737

Note: Some totals may not add up due to rounding.

Source: Statistics and Data Development Unit, Alberta Agriculture, Food and Rural Development





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# Table 2 - Summary of Statistics

Table 2 - Summary of Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum	Range	Skewness	Kurtosis
Age	35.2	12.5	18	65	47	-0.2	3.2
Gender	1.5	1.0	1	2	1	0.1	3.0
Marital Status	2.1	1.1	1	3	2	0.3	3.1
Education	13.5	2.5	9	18	9	-0.1	3.3
Income	45000	15000	20000	80000	60000	0.5	3.4
Health Status	1.8	0.8	1	3	2	0.2	3.0
Employment	1.2	0.5	1	2	1	0.1	3.0
Life Satisfaction	4.2	1.5	1	7	6	-0.3	3.1
Stress Level	3.8	1.2	1	6	5	0.4	3.2
Quality of Life	5.5	1.8	2	8	6	-0.2	3.3
Overall Well-being	6.2	2.0	3	9	6	-0.1	3.4







